

CLAIMS

1. A battery, comprising:

a battery housing defining a receiving area, said housing being configured to receive and engage a plurality of cells each having a cell housing;

- 5 a cell element being received and engaged within each of said cell housings, said cell element comprising a plurality of positive plates each having a positive tab portion depending outwardly from a periphery, a plurality of negative plates each having a negative tab portion depending outwardly from a periphery, and a nonconductive separator disposed in
- 10 between said plurality of positive plates and said plurality of negative plates; a positive plate being secured to each of said positive tab portions of said cell element, said positive plate including a positive post;
- a negative plate being secured to each of said negative tab portions of said cell element, said negative plate including a negative post; and
- 15 an inner cover being configured to cover said positive and negative plates, said inner cover being configured to allow a portion of said positive and said negative posts to pass therethrough.

2. The battery as in claim 1, wherein said inner cover defined a plurality of receiving areas for receiving a lead insert.

3. The battery as in claim 2, wherein said plurality of receiving areas are defined by a plurality of retaining walls.

4. The battery as in claim 3, wherein said plurality of retaining walls surround a pair of openings being configured to allow a positive post and a negative post of adjacent cell elements to pass therethrough.

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5. The battery as in claim 1, wherein said opening includes an O-ring being configured to receive and engaged in portion of said positive post and said negative post as they pass through said openings.

6. The battery as in claim 2, wherein said lead insert electrically connects a positive post of a first cell element to a negative post of an adjacent cell element.

7. The battery as in claim 1, wherein each of said cell elements is connected in series to an adjacent cell element.

8. The battery as in claim 7, wherein each cell housing has an outer configuration being configured to the received within a complementary receiving area defined in said battery housing.

9. An outer housing for a cell element of the battery, comprising:
 an internal receiving area defined by a pair of opposing walls, a pair of sidewalls disposed between said pair of opposing sidewalls and a bottom, said outer housing defining a lower end portion, an upper portion and a transitional portion, said transitional portion being disposed between said lower end portion and said upper portion, said outer housing defining an outer configuration for being received and engaged in a complementary configuration of a battery housing.

10. A battery cell, comprising:

a) a cell element, comprising:

i) plurality of positive plates each of said plurality of positive plates having a positive lug;

5 ii) a plurality of separators; and

iii) a plurality of negative plates each of said negative plates having a negative lug, said plurality of positive plates, said plurality of

separators, and said plurality of negative plates being configured into a compressible stack;

- 10 b) a casing for receiving said cell element;
- c) a positive end plate having a positive post, said positive and plate being secured to said positive lugs; and
- d) a negative end plate having a negative post, said negative end plate being secured to said negative lugs.
11. A battery, comprising:
- a) a plurality of cell elements each having:
- i) a plurality of positive plates each of said plurality of positive plates having a positive lug;
- 5 ii) a plurality of separators; and
- iii) a plurality of negative plates each of said negative plates having a negative lug, said plurality of positive plates, said plurality of separators, and said plurality of negative plates being configured into a compressible stack;
- 10 b) a plurality of casings for receiving said plurality of cell elements;
- c) a plurality of positive end plates each having a positive post, said positive end plates being secured to said positive lugs of said plurality of cell elements;
- 15 d) a plurality of negative end plates each having a negative post, said negative end plates being secured to said negative lugs of said plurality of cell elements;
- e) a housing being configured to receive and engage said plurality of casings; and
- 20 f) an inner cover being configured to cover said plurality of cell elements, said inner cover having a plurality of openings being configured and positioned to allow adjacent positive and negative posts to pass therethrough.

12. A method for assembling a battery having a plurality of cells, comprising:

- 5 inserting a plurality of cells each having a cell housing into a battery housing having an internal configuration for receiving and engaging a complementary external configuration of said cell housing; and
- electrically connecting each of said plurality of cells in series by providing a plurality of lead inserts for making contact with a positive post and a negative post of said plurality of cells.

13. The method as in claim 12, wherein said lead inserts are welded to said positive post and said negative post of said plurality of cells.

14. The method as in claim 13, wherein said lead inserts are positioned above a cover portion inserted between said plurality of cells and said lead inserts and a portion of said positive posts and a portion of said negative posts pass through openings in said cover portion.